AIR QUALITY PERMIT

Issued To:	Big Sky Insulations, Inc. 15 Arden Drive P.O. Box 838 Belgrade, MT 59714	Permit: #2889-03 Administrative Amendment (AA) Request Received: 11/24/04 Department Decision on AA: 08/10/05 Permit Final: 08/26/05 AFS #: 031-0015

An air quality permit, with conditions, is hereby granted to Big Sky Insulations, Inc. (BSI), pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.740, *et seq*., as amended, for the following:

Section I: Permitted Facilities

A. Plant Location

BSI is located in Belgrade, Montana. This facility expands polystyrene beads to form insulation sheets that are cut and used as insulation material for buildings and other various uses. BSI's legal description is the NE ¼ of Section 2, Township 1 South, Range 4 East, in Gallatin County, Montana.

B. Current Permit Action

On November 24, 2004, the Montana Department of Environmental Quality – Air Resources Management Bureau (Department) received a request for a permit determination from BSI. Specifically, BSI proposed the replacement of an existing and permitted process mold with a new mold.

In accordance with the provisions of the Administrative Rules of Montana (ARM) 17.8.745 (de minimis rule), a permit is not required for construction or changed conditions of operation at a permitted facility that would not increase the facilities Potential to Emit (PTE) by greater than 15 tons per year of any regulated pollutant and would not otherwise violate any existing permit condition(s). Because BSI's existing air quality Permit #2889-02 included an enforceable expandable polystyrene throughput limit and because this limit established the Volatile Organic Compounds (VOC) PTE from mold operations, the proposed mold replacement does not increase the VOC PTE from BSI mold operations. Therefore, the proposed mold replacement is a de minimis action. The current permit action updates the permit and permit analysis to include the new mold.

Section II: Limitations and Conditions

A. Emission Limitations

1. BSI may not cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over six consecutive minutes (ARM 17.8.304).

2. BSI may not produce more than 6,300,000 pounds per calendar year of expandable polystyrene (ARM 17.8.752 and ARM 17.8.1204).

3. BSI may not use an adhesive with a VOC content greater than 0.99% VOC by weight (ARM 17.8.749).

4. BSI may not use more than 192,500 pounds of adhesive per calendar year (ARM 17.8.749).

B. Emission Testing Requirements

1. All compliance source tests shall be conducted in accordance with the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

2. The Department may require testing (ARM 17.8.105).

C. Reporting Requirements

1. The operator shall maintain on-site records showing the following (ARM 17.8.749):

   a. Total amount of expandable polystyrene produced for the current calendar year (tons);

   b. The VOC content of the adhesive; and

   c. Total amount of adhesive used during the current calendar year (pounds).

2. All records compiled in accordance with this permit must be maintained by BSI as a permanent business record for at least five years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

3. BSI shall supply the Department with annual production information for all emission points, as required by the Department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the emission inventory contained in the permit analysis and sources identified in Section I of the permit analysis.

   Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in units as required by the Department (ARM 17.8.505).

4. BSI shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745, that would include a change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location or fuel specifications, or would result in an increase in source capacity above its permitted operation or the addition of a new emission unit. The notice must be submitted to the Department, in writing, 10 days prior to start up or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(1)(d) (ARM 17.8.745).

5. BSI shall annually certify that its actual emissions are less than those that would require the source to obtain an air quality operating permit as required by ARM

17.8.1204(3)(b). The annual certification shall comply with the certification requirements of ARM 17.8.1207, and shall be submitted with the annual emission inventory information (ARM 17.8.749 and ARM 17.8.1204).

Section III: General Conditions

A. Inspection – BSI shall allow the Department's representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment (CEMS, CERMS) or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.

B. Waiver – The permit and the terms, conditions, and matters stated herein shall be deemed accepted if BSI fails to appeal as indicated below.

C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving BSI of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq*. (ARM 17.8.756).

D. Enforcement – Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties, or other enforcement action as specified in Section 75-2-401, *et seq*., MCA.

E. Appeals – Any person or persons jointly or severally adversely affected by the Department's decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing does not stay the Department's decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of the Department's decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, the Department's decision on the application is final 16 days after the Department's decision is made.

F. Permit Inspection – As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by the Department at the location of the source.

G. Permit Fee – Pursuant to Section 75-2-220, MCA, as amended by the 1991 Legislature, failure to pay the annual operation fee by BSI may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.

Permit Analysis
Big Sky Insulations, Inc.
Permit #2889-03

I. Introduction/Process Description

Big Sky Insulations, Inc. (BSI) operates the following equipment at its facility in the NE ¼ of Section 2, Township 1 South, Range 4 East, in Gallatin County, Montana.

A. Permitted Equipment

1. Dae Kong batch pre-expander/fluid bed dryer, model DKF-1800SP, with a 2000 pounds per hour maximum capacity.

2. Kurtz Monoflex block mold.

3. Block storage area.

4. Natural Gas Boiler, model 100 AMC, with a 4.2 MMBtu per hour maximum capacity.

5. Black Brothers adhesive roll coater.

B. Process Description

The first step in the expandable polystyrene (EPS) process is expansion of the polystyrene beads. During bead expansion, the beads are exposed to steam in a process unit called a pre-expander. The transfer of heat vaporizes a volatile hydrocarbon (pentane) that is trapped in the polystyrene matrix, which in turn causes the beads to foam and expand. Following the expansion process, the expanded raw material (or pre-puff) is transported to a storage area. Large fabric bags are used to store the pre-puff for 4 to 24 hours, allowing the material to cool and age. During this time, more pentane is released from the pre-puff.

After aging, the pre-puff material is loaded into a preheated mold, where the beads are exposed to steam through small holes in the mold. The beads expand and become soft and molten to form a single polymer mass where more pentane is released. Cool water is then circulated through the mold and the shaped block is ejected from the mold. Steam for the molding process and pre-expander is generated from a natural gas-fired boiler. Next, the blocks are stored, allowing additional pentane to be released. The blocks are then sliced into sheets or various custom shapes. Finally, an adhesive roll coater applies adhesive to some of the sheets so they can be laminated onto plywood.

C. Permit History

On June 12, 1995, BSI submitted a complete permit application to operate a facility that expands polystyrene beads to form insulation sheets. Permit **#2889-00** was issued on August 7, 1995. This permit limited the amount of Volatile Organic Compounds (VOC) emitted to less than 100 tons per year; therefore, BSI did not have to apply for an operating permit.

On October 7, 1999, the Montana Department of Environmental Quality (Department) received a modification request from Big Sky Insulation. In 1999, the U.S. Environmental Protection Agency (EPA) notified the Department that any condition in an air quality preconstruction permit was considered a federally enforceable condition. However, there were certain state rules (Administrative Rule of Montana (ARM) 17.8.717 and ARM 17.8.315) that were never intended to be federally enforceable. The Department notified all applicable permitted facilities and informed them that they could request the removal of these conditions from the preconstruction permit. It was noted that removing either of these conditions would not relieve the facility from complying with the rule upon which the permit condition was based; however, removing it would ensure that enforcement of the condition remained solely with the Department. This permit action removed the condition, based on ARM 17.8.717, from Big Sky Insulation's permit. Permit **#2889-01** replaced Permit #2889-00.

On February 7, 2002, BSI submitted a complete permit application to the Department requesting an alteration to Permit #2889-01. The application requested the replacement of the existing continuous pre-expander with a new pre-expander at the facility. Because the Potential to Emit (PTE) of the new pre-expander is greater than 15 tons per year of VOCs, a permit alteration was required for the project. Permit **#2889-02** replaced Permit #2889-01.

D. Current Permit Action

On November 24, 2004, the Department received a request for a permit determination from BSI. Specifically, BSI proposed the replacement of an existing and permitted process mold with a new mold.

In accordance with the provisions of ARM 17.8.745 (de minimis rule), a permit is not required for construction or changed conditions of operation at a permitted facility that would not increase the facilities PTE by greater than 15 tons per year of any regulated pollutant and would not otherwise violate any existing permit condition(s). Because BSI's existing air quality Permit #2889-02 included an enforceable expandable polystyrene throughput limit and because this limit established the VOC PTE from mold operations, the proposed mold replacement does not increase the VOC PTE from BSI mold operations. Therefore, the proposed mold replacement is a de minimis action. The current permit action updates the permit and permit analysis to include the new mold. Permit **#2889-03** replaces Permit #2889-02.

E. Additional Information

Additional information, such as applicable rules and regulations, Best Available Control Technology (BACT) determinations, air quality impacts, and environmental assessments, is included in the analysis associated with each change to the permit.

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the ARM and are available from the Department upon request. Upon request, the Department will provide references for locations of complete copies of all applicable rules and regulations or copies where appropriate.

A. ARM 17.8, Subchapter 1 - General Provisions, including, but not limited to:

1. ARM 17.8.101 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment, including instruments and sensing devices, and shall conduct tests, emission or ambient, for such periods of time as may be necessary, using methods approved by the Department.

3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source, or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Montana Clean Air Act, 75-2-101, *et seq*., Montana Code Annotated (MCA).

   BSI shall comply with all requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly, by telephone, whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation, or to continue for a period greater than four hours.

5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means which, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner that a public nuisance is created.

B. ARM 17.8, Subchapter 2 - Ambient Air Quality, including, but not limited to the following:

1. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
2. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
3. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
4. ARM 17.8.213 Ambient Air Quality Standard for Ozone
5. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
6. ARM 17.8.223 Ambient Air Quality Standard for PM-10

BSI must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 - Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over six consecutive minutes.

2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under this rule, BSI shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.

3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this section.

4. ARM 17.8.310 Particulate Matter, Industrial Processes. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.

5. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. Commencing July 1, 1971, no person shall burn any gaseous fuel containing sulfur compounds in excess of 50 grains per 100 cubic feet of gaseous fuel, calculated as hydrogen sulfide at standard conditions.

6. ARM 17.8.340 Standard of Performance for New Stationary Sources. The owner or operator of any stationary source or modification, as defined and applied in 40 CFR Part 60, shall comply with the standards and provisions of 40 CFR Part 60.

   40 CFR 60, Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. This subpart does not apply to the natural gas boiler at BSI because the natural gas boiler has a heat input capacity less than 10 million Btu/hr.

   40 CFR 60, Subpart DDD - Standards of Performance for Volatile Organic Compound Emissions from the Polystyrene Manufacturing Industry. This subpart does not apply to BSI because BSI operations do not include a polymerization process that makes expandable polystyrene beads.

D. ARM 17.8, Subchapter 5 - Air Quality Permit Application, Operation and Open Burning Fees, including, but not limited to:

1. ARM 17.8.504 Air Quality Permit Application Fees. BSI shall submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. The current permit action is administrative and does not require an application or an application fee.

2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit, excluding an open burning permit, issued by the Department, and the air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

   An air quality operation fee is separate and distinct from an air quality permit

application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions which pro-rate the required fee amount.

E. ARM 17.8, Subchapter 7 - Permit, Construction and Operation of Air Contaminant Sources, including, but not limited to:

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit alteration to construct, alter, or use any air contaminant sources that have the PTE greater than 25 tons per year of any pollutant. BSI has a PTE greater than 25 tons per year of VOC; therefore, an air quality permit is required.

3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.

4. ARM 17.8.745 Montana Air Quality Permits--Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.

5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, alteration, or use of a source. The current permit action is administrative and does not require a permit application. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. The current permit action is administrative and does not require public notice.

6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.

7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The required BACT analysis is included in Section III of this permit analysis.

8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.

9. ARM 17.8.756 Compliance with Other Requirements. This rule states that

nothing in the permit shall be construed as relieving BSI of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq*.

10. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or altered source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than one year after the permit is issued.

11. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).

12. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10. The current permit action is an administrative amendment.

13. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of Intent to Transfer, including the names of the transferor and the transferee, is sent to the Department.

F. ARM 17.8, Subchapter 8 - Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.

2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification with respect to each pollutant subject to regulation under the Federal Clean Air Act (FCAA) that it would emit, except as this subchapter would otherwise allow.

   This facility is not a major stationary source, because it is not a listed source and does not have the potential to emit more than 250 tons per year of any air pollutant.

G. ARM 17.8, Subchapter 12 - Operating Permit Program Applicability, including, but not

limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any stationary source having:

   a. PTE > 100 tons per year of any pollutant;

   b. PTE > 10 tons/year of any one Hazardous Air Pollutant (HAP), PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or

   c. PTE > 70 tons/year of particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) in a serious PM_{10} nonattainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program Applicability. (1) Title V of the FCAA Amendments of 1990 requires that all sources, as defined in ARM 17.8.1204 (1), obtain a Title V operating permit. In reviewing and issuing Air Quality Permit #2889-03 for BSI, the following conclusions were made:

   a. The facility's permitted allowable PTE is less than 100 tons/year for any pollutant.

   b. The facility's PTE is less than 10 tons/year of any one HAP and less than 25 tons/year of all HAPs.

   c. This source is not located in a serious PM_{10} nonattainment area.

   d. This facility is not subject to any current NSPS.

   e. This facility is not subject to any current NESHAP standards.

   f. This source is not a Title IV affected source, nor a solid waste combustion unit.

   g. This source is not an EPA designated Title V source.

   BSI's Permit #2889-03 includes enforceable synthetic minor limits that allow the facility to stay below the Title V operating permit threshold for VOC emissions. Therefore, the facility is not a major source as defined under the Title V operating permit program and does not require a Title V operating permit.

   h. ARM 17.8.1204(3). The Department may exempt a source from the requirement to obtain an air quality operating permit by establishing federally enforceable limitations that limit that source's potential to emit.

      i. In applying for an exemption under this section, the owner or operator of the source shall certify to the Department that the source's potential to emit does not require the source to obtain an air quality operating permit.

      ii. Any source that obtains a federally enforceable limit on potential

to emit shall annually certify that its actual emissions are less than those that would require the source to obtain an air quality operating permit.

The Department determined that the annual reporting requirements contained in the permit are sufficient to satisfy this requirement.

3. ARM 17.8.1207 Certification of Truth, Accuracy, and Completeness. BSI shall annually certify that its actual emissions are less than those that would require the source to obtain an air quality operating permit as required by ARM 17.8.1204 (3)(b). The annual certification shall comply with requirements of ARM 17.8.1207. The annual certification shall be submitted along with the annual emission inventory information.

III. Emissions Inventory

tons/year						
Source	**PM**	**PM_{10}**	**SO_X**	**NO_X**	**VOC**	**CO**
Pre-expander/Fluid Bed Dryer	0.00	0.00	0.00	0.00	24.57	0.00
Prepuff Storage Bags	0.00	0.00	0.00	0.00	22.68	0.00
Mold	0.00	0.00	0.00	0.00	24.57	0.00
Block Storage Area	0.00	0.00	0.00	0.00	23.62	0.00
Roll Coater Adhesive	0.00	0.00	0.00	0.00	0.95	0.00
Natural Gas Boiler	0.22	0.22	0.01	1.84	0.05	0.39
Total	**0.22**	**0.22**	**0.01**	**1.84**	**96.45**	**0.39**

Pre-expander

Process Rate: 6300000 lb/yr
Hours of operation: 8760 hr/yr

VOC Emissions (Pentane):

Wt. % Pentane in Raw Beads: 6% {BASF Lab Report, "Field Evaluations of Pentane Emissions During Styropor Processing", p. 5, Feb. '90)
Wt. % Pentane in Final Product: 3% {BASF Lab Report, "Field Evaluations of Pentane Emissions During Styropor Processing", p. 7, Feb. '90)
Emission Factor: 26% of total pentane emission are from this equipment {BASF Lab Report, "Field Evaluations of Pentane Emissions During Styropor Processing", p. 8, Feb. '90)
Control Efficiency: 0.0%
Calculations: 6300000 lb/yr * [0.26 (0.06 - 0.03)] / 8760 hr/yr = 5.61 lb/hr
5.61 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 24.57 ton/yr
24.57 ton/yr * (1.00 - 0.00) = 24.57 ton/yr

Prepuff Storage Bags

Process Rate: 6300000 lb/yr
Hours of operation: 8760 hr/yr

VOC Emissions (Pentane):

Wt. % Pentane in Raw Beads: 6% {BASF Lab Report, "Field Evaluations of Pentane Emissions During Styropor Processing", p. 5, Feb. '90)
Wt. % Pentane in Final Product: 3% {BASF Lab Report, "Field Evaluations of Pentane Emissions During Styropor Processing", p. 7, Feb. '90)
Emission Factor: 24% of total pentane emission are from this equipment {BASF Lab Report, "Field Evaluations of Pentane Emissions During Styropor Processing", p. 8, Feb. '90)
Control Efficiency: 0.0%

Calculations: 6300000 lb/yr * [0.24 (0.06 - 0.03)] / 8760 hr/yr = 5.18 lb/hr
5.18 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 22.68 ton/yr
22.68 ton/yr * (1.00 - 0.00) = 22.68 ton/yr

Mold

Process Rate: 6300000 lb/yr
Hours of operation: 8760 hr/yr

VOC Emissions (Pentane):

Wt. % Pentane in Raw Beads: 6% {BASF Lab Report, "Field Evaluations of Pentane Emissions During Styropor Processing", p. 5, Feb. '90)
Wt. % Pentane in Final Product: 3% {BASF Lab Report, "Field Evaluations of Pentane Emissions During Styropor Processing", p. 7, Feb. '90)
Emission Factor: 26% of total pentane emission are from this equipment {BASF Lab Report, "Field Evaluations of Pentane Emissions During Styropor Processing", p. 8, Feb. '90)

Control Efficiency: 0.0%
Calculations: 6300000 lb/yr * [0.26 (0.06 - 0.03)] / 8760 hr/yr = 5.61 lb/hr
5.61 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 24.57 ton/yr
24.57 ton/yr * (1.00 - 0.00) = 24.57 ton/yr

Block Storage Area

Process Rate: 6300000 lb/yr
Hours of operation: 8760 hr/yr

VOC Emissions (Pentane):

Wt. % Pentane in Raw Beads: 6% {BASF Lab Report, "Field Evaluations of Pentane Emissions During Styropor Processing", p. 5, Feb. '90)
Wt. % Pentane in Final Product: 3% {BASF Lab Report, "Field Evaluations of Pentane Emissions During Styropor Processing", p. 7, Feb. '90)
Emission Factor: 25% of total pentane emissions are from this equipment {BASF Lab Report, "Field Evaluations of Pentane Emissions During Styropor Processing", p. 8, Feb. '90)

Control Efficiency: 0.0%
Calculations: 6300000 lb/yr * [0.25 (0.06 - 0.03)] / 8760 hr/yr = 5.39 lb/hr
5.39 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 23.62 ton/yr
23.62 ton/yr * (1.00 - 0.00) = 23.62 ton/yr

Roll Coater Adhesive

Maximum Adhesive Use: 192500 lb/yr (2.5 x more than last yr. use, Permit Application #2889-00)
Wt. % VOC: 0.99% (From Ashland Chemical for adhesive WD3-A322, Permit Application #2889-00)

VOC Emissions:

Control Efficiency: 0.0%
Calculations: 192500 lb/yr * 0.0099 * 0.0005 ton/lb = 0.95 ton/yr
0.95 ton/yr * (1.00 - 0.00) = 0.95 ton/yr

Natural Gas Boiler

Maximum Fuel Combustion: 4200000 Btu/hr
Maximum Fuel Consumption: 4200000 Btu/hr * 0.001 scf/Btu * 1E-6 MMscf = 0.0042 MMscf/hr
Hours of operation: 8760 hr/yr

PM Emissions:

Emission Factor: 12.0 lb/MMscf (AP-42, p. 1.4-4, Table 1.4-1, 7/93)
Control Efficiency: 0%

Calculations: 12.0 lb/MMscf * 0.0042 MMscf/hr = 0.05 lb/hr

0.05 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.2 ton/yr
0.2 ton/yr * (1.00 - 0.0) = 0.2 ton/yr

PM_{10} Emissions:

Emission Factor: 12 lb/MMscf (AP-42, p. 1.4-4, Footnote c, 7/93)
Control Efficiency: 0%
Calculations: 12.0 lb/MMscf * 0.0042 MMscf/hr = 0.05 lb/hr
0.05 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.2 ton/yr
0.2 ton/yr * (1.00 - 0.0) = 0.2 ton/yr

NO_x Emissions:

Emission Factor: 100 lb/MMscf (AP-42, p. 1.4-5, Table 1.4-2, 7/93)
Control Efficiency: 0%
Calculations: 100 lb/MMscf * 0.0042 MMscf/hr = 0.42 lb/hr
0.42 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 1.84 ton/yr
1.84 ton/yr * (1.00 - 0.0) = 1.84 ton/yr

VOC Emissions:

Emission Factor: 2.784 lb/MMscf (AP-42, p. 1.4-6, Table 1.4-3, footnote g, 7/
Control Efficiency: 0%
Calculations: 2.784 lb/MMscf * 0.0042 MMscf/hr = 0.012 lb/hr
0.012 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.051 ton/yr
0.051 ton/yr * (1.00 - 0.0) = 0.051 ton/yr

CO Emissions:

Emission Factor: 21 lb/MMscf (AP-42, p. 1.4-5, Table 1.4-2, 7/93)
Control Efficiency: 0%
Calculations: 21 lb/MMscf * 0.0042 MMscf/hr = 0.09 lb/hr
0.09 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.39 ton/yr
0.39 ton/yr * (1.00 - 0.0) = 0.39 ton/yr

SO_x Emissions:

Emission Factor: 0.6 lb/MMscf (AP-42, p. 1.4-5, Table 1.4-2, 7/93)
Control Efficiency: 0%
Calculations: 0.6 lb/MMscf * 0.0042 MMscf/hr = 0.003 lb/hr
0.003 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.01 ton/yr
0.011 ton/yr * (1.00 - 0.0) = 0.01 ton/yr

IV. BACT Determination

A BACT determination is required for each new or altered source. BSI shall install on the new or altered source the maximum air pollution control capability which is technically practicable and economically feasible, except that BACT shall be utilized. The current permit action is an administrative amendment and the equipment added to the facility under this administrative action was accomplished in accordance with the provisions of the de minimis rule; therefore, a BACT analysis is not required for the current permit action.

V. Existing Air Quality and Impacts

The current permit action is administrative and does not result in any impact to existing and permitted air pollutant emissions; therefore, the current permit action will not further impact existing air quality in the affected area of operations.

VI. Environmental Assessment

The current permit action is administrative and does not require an environmental assessment.

Permit Analysis Prepared By: M. Eric Merchant, MPH
Date: June 22, 2005